Emotion Swings Analysis during Currency ban

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Abstract: Mr. Narendra Modi shocked the whole country by demonetizing the five hundred and one thousand rupee notes on 8th Nov 2016. Thereafter people from every corner of the world reacted through the various medium on this move of the government. The main concern behind the currency ban is the threat of black money, fake currency terrorist funding. In this research article, we analyzed the emotion swing of the twitter users on this issue. The beauty of the Twitter is its diversified users. As we know the amount of data is being generated either from e-commerce or social networking sites on a regular basis, therefore, it is impossible to handle and difficult to infer on what is being talked about. The data is so huge therefore analyzing and adequate processing must be a mainstream. Emotion swing analysis is what we have presented in our system which finds the change in emotions (with respect to the subject being in trend) of people over a period. The classifier used for the classification is Naïve Bayes Classifier. This method is applied to a dataset that contains forty thousand tweets collected over a period. Our main aim is to highlight the extraordinary potential of Naïve Bayes algorithm on a current activity of demonetization.

Keywords: Naïve Bayes, Sentiment, demonetization.

1. INTRODUCTION

Twitter is a widely used social media and microblogging website. It is a platform for people around the various corners of the world to share their opinion and read the opinions of other people on any topic, issue or trend. Emotion analysis is a technique of analyzing the emotions of people through a data that is in the form of text. In twitter data analysis, tweets are extracted from twitter based on various factors such as location, topic, etc. These tweets are further analyzed to find the emotions of people such as joy, surprise, anger, sadness, and so on. There can be various applications of this analysis. One of the applications is that it can be used by the government for making better policies and solve the existing problems of the people based on their reactions on an issue.

In this paper, we are extracting the opinion of people based on their tweets on 'Demonetisation'. On 8 [th] November 2016, our Honourable Prime Minister, Shri Narendra Damodardas Modi banned the use of old 500 and 1000 rupee notes. This step was taken as a move to control the flow of black money that was in circulation all over the country. While different people have different opinions on the issue, many people also posted their opinions on various online platforms such as Twitter. This paper aims to analyze the tweets posted by the people on twitter and find the change in their opinion with time.

In this paper, we build a Twitter corpus utilizing Twitter API, R studio coding to incline the Twitter corpus, then using know edge based techniques we utilize an accessible lexical assets and apply it to the Twitter corpus. To think about the outcomes from the information-based strategy to a machine learning procedure we then utilize Naive Bayes grouping models to the corpus which will part the corpus into positive and negative tweets and additionally highlighting which tweets are ordered. Gullible Bayes is utilized as it is frequently functions admirably as a decent first classifier in information examination.

2. PROPOSED ALGORITHM & LANGUAGE

2.1. About the algorithm

The calculation depends on Naive Bayes classifier that is called as a pack of words. It is used to recognize the count of positive words and negatives words. If the word shows up in the positive word list, the aggregate score redesigned is +1, else the other way around.

2.2. About the language used and basic steps involved

The language used for the experiment is R, which is an open source freeware software used for statistical computing and it can run on almost all Operating systems like Linux, Windows, MacOS, etc.

Steps involved:

1.0 Install necessary packages like tm, twitter, wordcloud, sentiment, ggplot2, Rstem, Rcurl, etc.)

2.0 Connect with the twitter API by login into your twitter account (i.e. Twitter authorization).

3.0 Getting tweets into R so that it can be used for text mining and analyzing different patterns.

4.0 Convert into character vector for the corpus.

5.0 Now make use of tm package to create corpus (collection of text).

6.0 It is obvious that tweets may contain stopwords, which are not really important in terms of analysis, so we can clean the corpus using tm package.

7.0 Create a wordcloud

2.3. Given an information test X, the posteriori likelihood of a theory

h, P(h|X) takes after the Bayes hypothesis

$$P(h|X) = P(X|H) \, P(h) \qquad (1)$$

$$P(X)$$

$$n$$

$$P(C_j \mid X) = P(C_j) \prod P(v_i \mid C_j) \qquad (2)$$

3.   SAMPLE TWEETS (BEFORE PRE-PROCESSING)

#DeMonetisation : Get Rs 2,000 cash from #Petrolpumps Nov 24 onwards http://mybs.in/2TJEAPQ @shinejac9:25 AM - 18 Nov 2016

Watch former FM @PChidambaram_IN explains reason why Modi Govt printed 2K denomination notes exposes their poor planning #DeMonetisation10:41 AM - 17 Nov 2016

For my friends who know India, this is what #demonetisation has led to. Unprecedented! @DineshAgarwal @rajeshsawhney @MiniMenon9:29 AM - 21 Nov 2016

4.   GRAPHS REPRESENTING THE EMOTION AND POLARITY FOR DIFFERENT DAYS INDIVIDUALLY
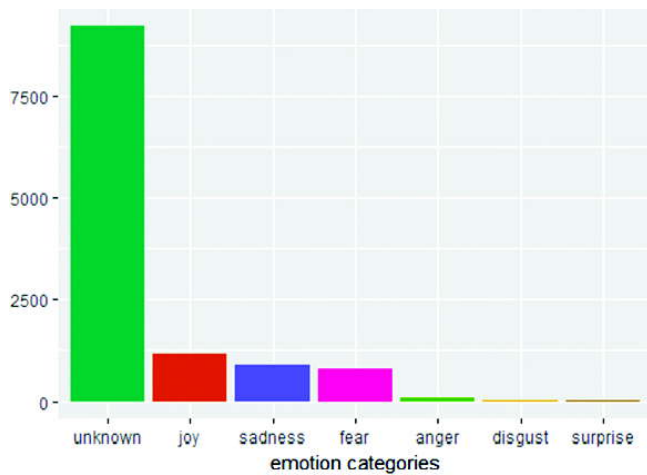
Figure 1: Emotion analysis for 8-11 Nov 2016
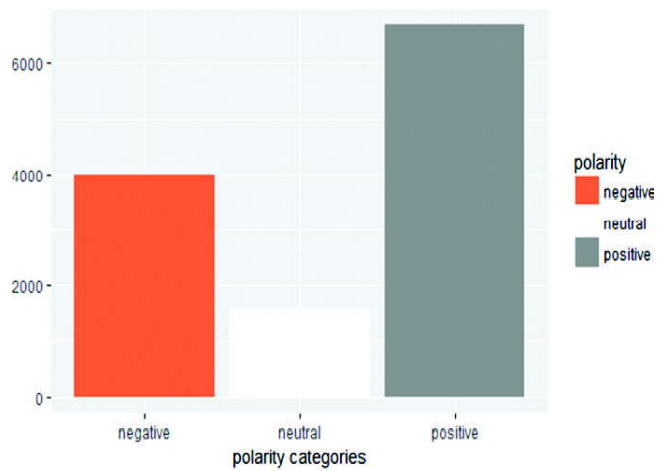
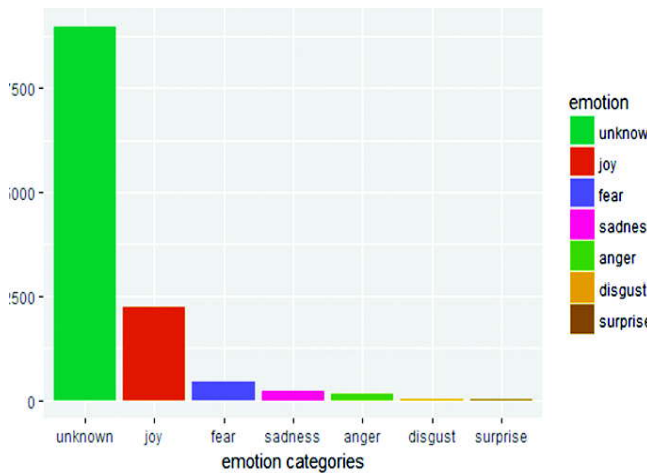**Figure 2: Polarity graph for 8-11 Nov 2016**

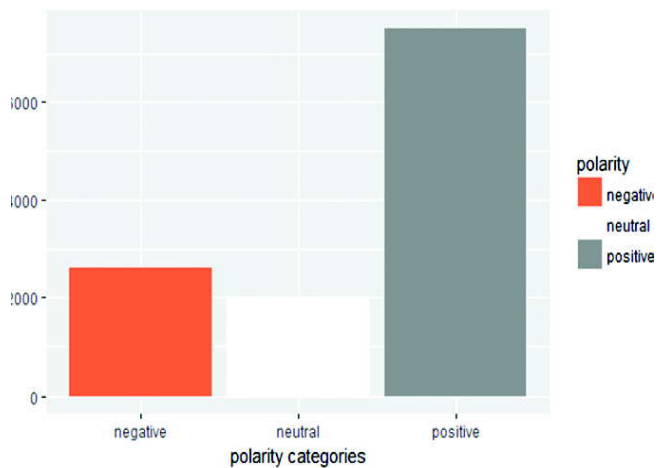**Figure 3: Emotion analysis for 12-15 Nov 2016**

Figure 4: Polarity graph for 12-15 Nov 2016
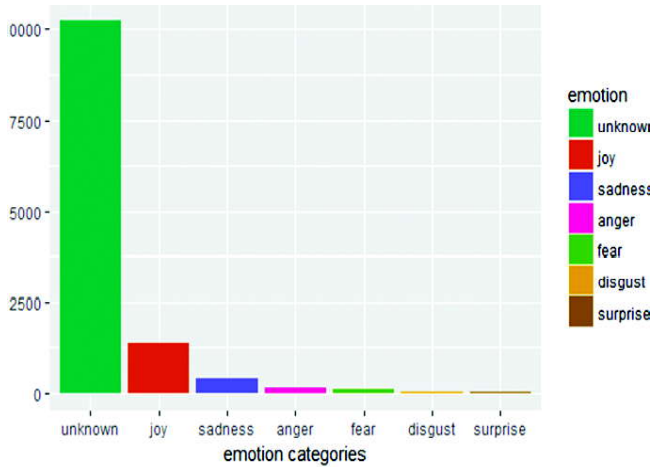
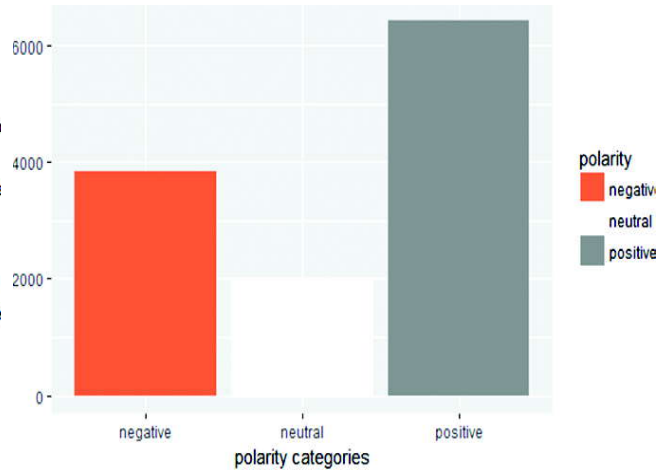**Figure 5: Emotion analysis for 16-19 Nov 2016**

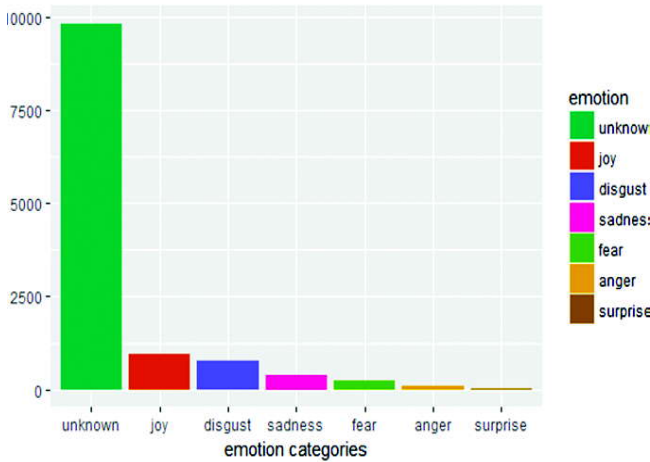**Figure 6: Polarity graph for 16-19 Nov 2016**
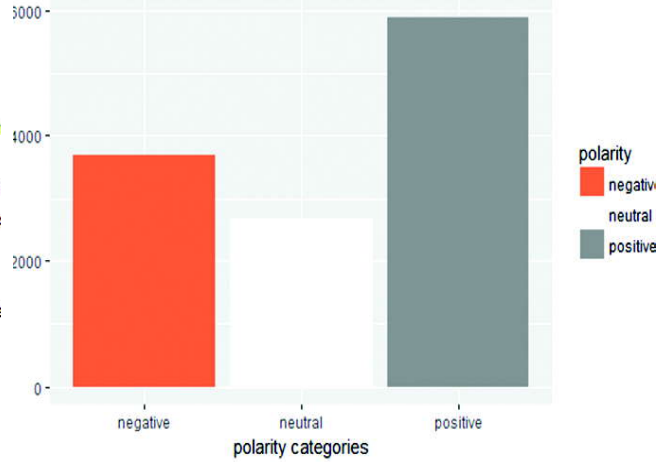

Figure 7: Emotion analysis for 20-23 Nov 2016

Figure 8: Polarity graph for 20-23 Nov 2016
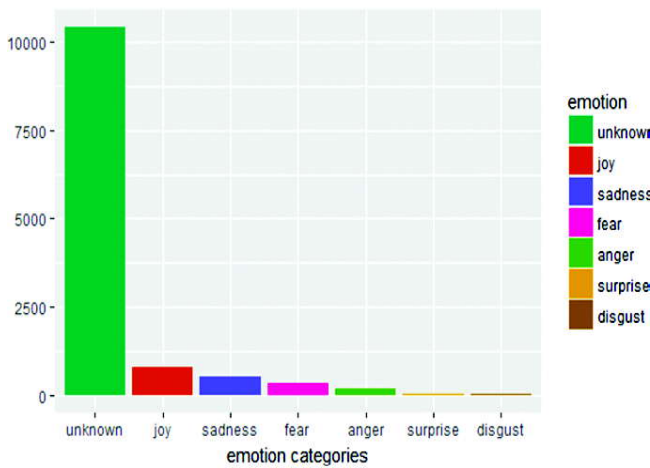

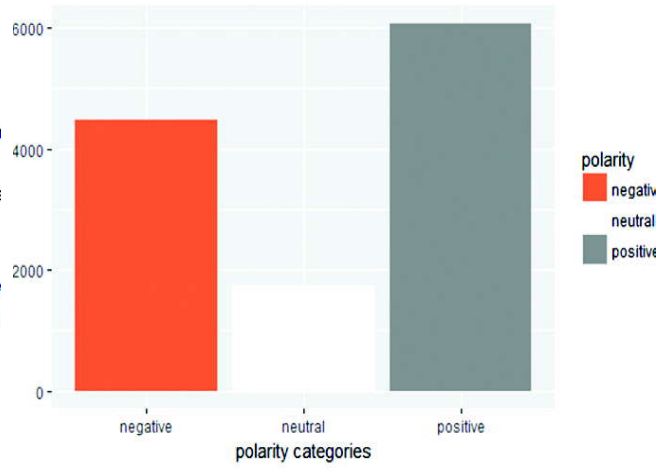**Figure 9: Emotion analysis for 24-27 Nov 2016**

Figure 10: Polarity graph for 24-27 Nov 2016

5. FINAL GRAPHS REPRESENTING THE EMOTION SWINGS AND POLARITY CHANGE OVER THE TIME I.E. FROM 8TH TO 27TH NOVEMBER 2016

As per the analysis, there was an immense change in feelings among the people. At the principal organize i.e from 8-11 November obscure feelings could be seen among the people. Then from 12-15 November, it can be observed that individuals were happy and they started loving the initiative of the government. Further, from 16-19 November individuals turned out to be quieter and made, and thus at the last stage it is seen that individuals were minimal furious because they were confronting a ton of inconveniences in their day-by-day schedule.
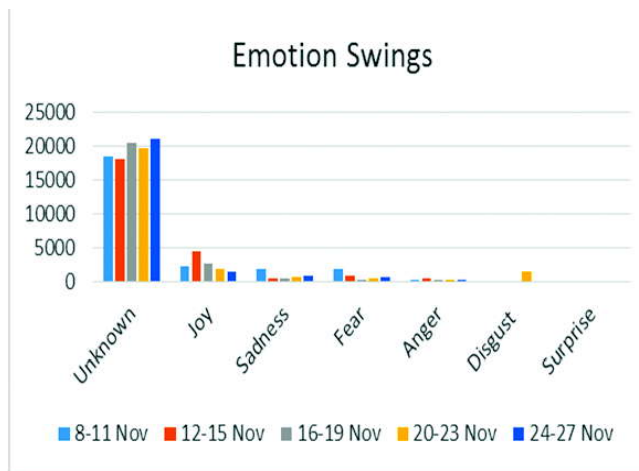

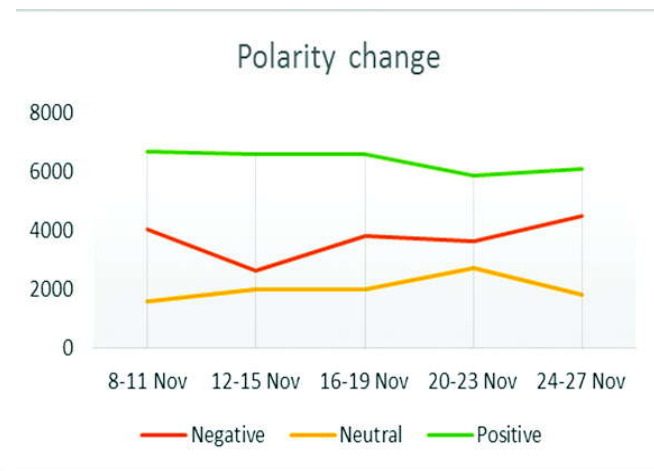**Figure 11: Emotion swings from 8th to 27th Nov 2016**

Figure 12: Polarity change from 8th to 27th Nov 2016

6. CONCLUSION

Today, interpersonal interaction on the Internet has become an important part of everybody's life. This issue recommends the utilization of nostalgic investigation and time arrangement examination for breaking down the reaction of individuals on Currency boycott for a timeframe. By making Internet valuable with the assistance of applying conclusion or supposition mining strategies, government associations, and organization producers can get surveys of their activities and get criticism from the general population. Such following and examination can give basic data to basic leadership in different areas. Despite the fact that a great deal of work has been done here, yet at the same time it goes about as a rich range for new analysts. Subsequently, this paper makes an endeavor to display the feeling swings in a sorted out way, covering different parts of conclusions and feelings. It has been acknowledged from the review that, despite the fact that the field has been explored a great deal as such, yet at the same time it goes about as a productive zone for new specialists, as it is extremely unlimited. It is expected that this paper will encourage the reference needs of specialists and experts and consequently will support inquire about around there. In future, we would recommend the utilization of this system on a greater information set issue, with the use of Hadoop and parallel registering.

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